

Notice of Allowability

Application No.

10/083,076

Examiner

Charles Chow

Applicant(s)

WU ET AL.

Art Unit

2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 8/3/2005.
2. ☒ The allowed claim(s) is/are 1 and 3-22.
3. ☒ The drawings filed on 26 February 2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Detailed Action***Allowable Subject Matter***

1. The following is an examiner's statement of reasons for allowance:

Claims 1, 3-22 are allowable over the prior art of record, the prior art fails to teach singly, particularly, or in combination, the subject matter, for the Hilbert filter for producing a copy of said secondary audio program SAP information with a phase shift; delay module for delaying said secondary audio program SAP information to produce a delayed copy of said SAP information, wherein said delay module is capable of applying a non-unity delay to said secondary audio program information to produce said delayed copy of said secondary audio program information, an FM demodulator for demodulating said SAP information using said non-unity delay and a discrete time index with a combination of said copy of said SAP information with a phase shift and said delayed copy of said SAP secondary audio program information to produce an FM demodulated signal, for a system to demodulation of secondary audio program information, as shown in independent claims 1, 12, 19. The dependent claims are also allowable due to their dependency upon the independent claims and having additional claimed features.

The closest patent to **Nagai (US 4,486,897)** teaches a system for demodulating sound signal S_{12} centered at $5f_H$, 5 times horizontal deflection frequency of the composite signal Scmps [Fig. 1-3, abstract], the FM demodulator 12 for demodulating S_{12} , signal located at 5 times of the horizontal deflection frequency $5f_H$, Fig. 3, col. 4, lines 12-65). Nagai fails to teach the **SAP**, the Hilbert filter for producing a phase shifted SAP, the non-unit delay for the FM demoduation.

Wang (US 6,356,598 B1) teaches the digital demodulator 22 [Fig. 3] for delaying the in-phase digitized signal from ADC 19 in delay module 322, the Hilbert filter 320 for shifting the

Art Unit: 2685

digitized signal to a quadrature phase shifted signal, 90 degree, for demodulating by complex multiplier 324 in a HDTV receiver [Fig. 3, abstract, col. 3, line 45 to col. 4, line 24]. Wang fails to teach the **SAP**, Hilbert filter for producing a phase shifted SAP, the non-unit delay for the FM demodulation.

Lafay et al. (US 6,476,878B1) teaches the band pass filter 48 for extracting auxiliary sound signal 21 for further signal processing [abstract, Fig. 2, Fig. 4], the FM demodulator 47 for demodulation of the audio signal on the main audio carrier [Fig. 2]. Lafay et al. fail to teach the SAP, since the 5.85 auxiliary audio is trap at sound trap 50; also does not teach the Hilbert filter for producing a phase shifted SAP, the non-unit delay for the FM demodulation. Other prior arts in below has been considered, but they fail to teach the above claimed features.

Collier et al. (US 5,404,405) teaches the delay 20, 10, 16, but no mention of non-unity delay, or SAP. Collier teaches the divider 30 for normalizing the amplitude of the audio sub-carrier, $I^2 - Q^2$ by $I^2 + Q^2$, the dividing of the sub-carrier power by the pilot signal power (col. 4, lines 27-38). Collier teaches the FM demodulator having delayed copy and phase shifted copy from Hilbert filter 18, for demodulating audio signal on the sub-carrier 38 KHz, using digital signal processing DSP [abstract, col. 1, line 62 to col. 2, line 45, col. 1, lines 8-10].

Kammeyer (US 4,506,228) teaches the low pass filter 150 coupled to demodulator [Fig. 14] for reducing or limiting noise with gently rising characteristic that falls off above the limit frequency at the upper frequency limit [col. 13, line 63 to col. 14 line 7; abstract, Fig. 1-8, col. 3, line 49 to col. 6, line 63].

Other prior arts from are also considered **Nakai et al. (US 4,862,099)**, **Hwang (US 5,440,269)**, but they fail to teach the above features.

Any comments considered necessary by applicant must be submitted no later than the

Art Unit: 2685

payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion


3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles C. Chow whose telephone number is (571) 272-7889. The examiner can normally be reached on 8:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Charles Chow *C.C.*

August 16, 2005.


EDWARD F. URBAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600